

## 6-10: Analyzing Solutions to Quadratic Equations

**Warmup:** Open your books to page 399. Work with a partner or two to complete the In-Class Activity. You don't have to draw the graphs, but fill out the table.

$y = ax^2 + bx + c$	# of x-intercepts of graph	Solutions to $ax^2 + bx + c = 0$	# of real solutions to $ax^2 + bx + c = 0$	Value of $b^2 - 4ac$
a. $y = 2x^2 - 12x + 18$				
b. $y = 2x^2 - 12x + 13$				
c. $y = 2x^2 - 12x + 23$				

3. What patterns do you notice?

6. a.

b.

c.

Ways to find real solutions to quadratics:

1.

2.

3.

*Discriminant:*

Three different possibilities for the discriminant:

1.

2.

3.

*Example 1:* Determine the number of roots (solutions), then solve.

a.  $6x^2 - 3x - 4 = 0$

b.  $7x^2 + 2x + 7 = 0$

*Example 2:* The function  $h(x) = -.005x^2 + 2x + 3.5$  gives the height  $h(x)$  and distance from home plate  $x$  for a ball hit by Pop Fligh. Does Pop's ball reach a height of 205 ft?

*Homework:*

**"Never let the fear of failure be an excuse for not trying. Society tells us that to fail is the most terrible thing in the world, but I know it isn't. Failure is part of what makes us human." - Amber Deckers**